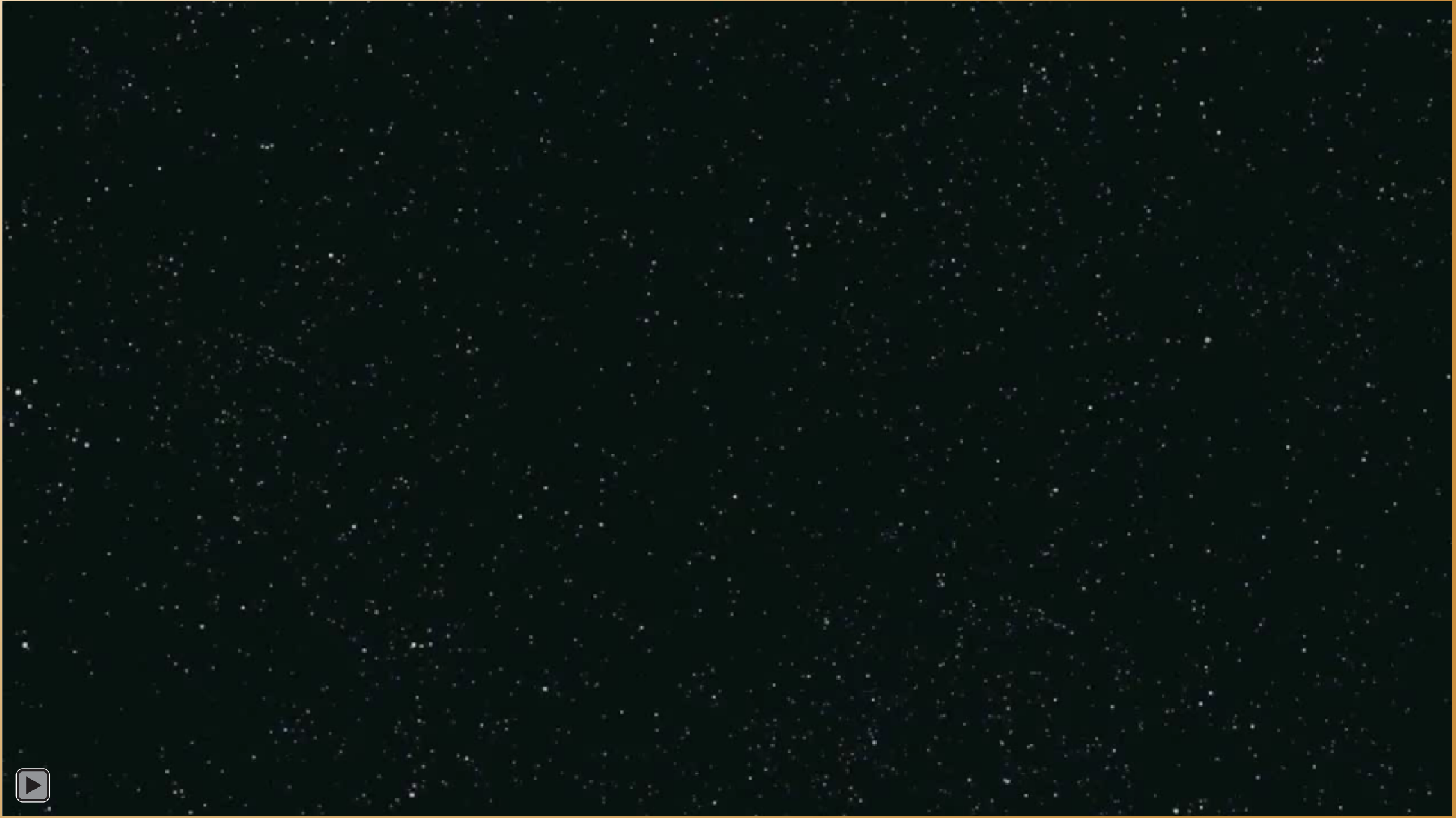


# USRC

## Scalable Dynamic Host Configuration Protocol (SDHCP)



Animation visualizes server and client actions from actual logs!

### **SDHCP–Exascale Service prototype, featuring:**

- Dynamic Recruitment of new servers based on load
- Dynamic Merging of servers based on reduction in load
- Resilience, multiple mirrors to protect data and for failover
- Self-organizing mirrors and servers
- Point-to-Point communications, broadcast-free
- Number of servers changes dynamically without updating clients

**Ideas will be used to implement other Exascale services.**

### **How it works:**

- Single server starts on head node, Clients start on slave nodes
- Clients request IP addresses by sending to virtual MAC addresses monitored by servers
- Server recruits clients for servers, as needed
- Servers mirror (exchange data with other servers)
- Servers load-balance IP space/clients if server load is high
- Servers absorb other servers' IP space/clients when system is low